Integrating the Electrical Power from Wave Energy Plant into the UK National Grid

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Abstract:

In this paper, multiple offshore wave energy converters with different output characteristics are connected to one power distribution substation. The connection between the power take-off of the different wave energy converters and the electrical power transmission system is presented in order to investigate whether multiple wave energy converters can augment energy yield and improve network integration capabilities. Moreover, the model of an array of wave energy converters is developed with the goal of analyzing the effects of the offshore wave farm on the electrical network to which it is connected. It is also developed to ensure that the electricity generated by the array is sufficiently controllable, and of a quality that can be integrate into the electricity supply network without unduly increasing the cost of connection, production or delivery.

Keywords:

Electrical Power Generation Systems, Induction and PM Generator, Inverter, Wave Energy

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